REGULATION 9
INORGANIC GASEOUS POLLUTANTS
RULE 8
NITROGEN OXIDES AND CARBON MONOXIDE FROM STATIONARY INTERNAL COMBUSTION ENGINES

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REGULATION 9
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RULE 8
NITROGEN OXIDES AND CARBON MONOXIDE FROM STATIONARY INTERNAL COMBUSTION ENGINES

(Adopted January 20, 1993)

9-8-100 GENERAL

9-8-101 Description: This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at 50 brake horsepower or more. ~~fired on gaseous fuels or any combination of gaseous and liquid fuels. This rule does not apply to emergency standby engines excluded under Regulation 1-110.2~~.

9-8-110 Exemptions: The requirements of Sections 9-8-301, 302, and 502 ~~this rule~~ shall not apply to the following:

110.1 Engines rated by the manufacturer at less than 250 brake horsepower output rating.

110.2 Engines fired exclusively by liquid fuels including, but not limited to, diesel fuel, gasoline, and methanol.

110.3 Engines used directly and exclusively for the growing of crops or the raising of fowl or animals.

110.4 Emergency standby engines.

9-8-111 Limited Exemption for Low Usage: The requirements of Sections 9-8-301 and 302 shall not apply to the following low use operations provided the requirements of Section 9-8-502 are met:

111.1 Engines rated at, or below, 1000 brake horsepower which operate less than 200 hours in any 12-consecutive-month period.

111.2 Engines rated above 1000 brake horsepower which operate less than 100 hours in any 12-consecutive-month period.

9-8-200 DEFINITIONS

9-8-201 Gaseous Fuels: For the purposes of this rule, gaseous fuels include, but are not limited to:

201.1 Fossil derived fuel gas such as natural gas, methane, ethane, propane, refinery fuel gas, and butane, including gases stored as liquids such as liquified petroleum gas (LPG).

201.2 Waste derived fuel gas such as sewage sludge digester gas or landfill gas.

9-8-202 Nitrogen Oxide (NOx) Emissions: The sum of nitric oxide (NO) and nitrogen dioxide (NO_2) in the engine exhaust, collectively expressed as nitrogen dioxide.

9-8-203 Rated Brake Horsepower: The maximum brake horsepower rating at maximum revolutions per minute (RPM) specified for the engine by the manufacturer or indicated on the engine nameplate.

9-8-204 Stationary Internal Combustion Engine (Engine): Any spark or compression ignited internal combustion engine that is operated, or intended to be operated, at a specific site for more than one year or is attached to a foundation at that site.

9-8-205 Rich-Burn Engine : Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of less than 4 percent, by volume. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

9-8-206 Lean-Burn Engine : Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of 4 percent, by volume, or greater. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

9-8-230 Emergency Standby Engine: Any engine that is ~~only~~ exclusively operated:

230.1 ~~To mitigate~~ For emergency ~~conditions~~ use; ~~or~~ and

230.2 For reliability-related activities.

9-8-231 Emergency ~~conditions~~ Use: the use of an emergency standby engine during any of the following~~Any of the following~~:

231.1 In the event of loss of regular natural gas supply;

~~Flood abatement, and control or avoidance of sewage overflows~~.

231.2 In the event of failure of regular electric power supply;~~Fire suppression and control.~~

231.3 Flood mitigation; ~~Mechanical or other failure of a critical motor.~~

231.4 Sewage overflow mitigation; ~~Failure of regular power supply.~~

231.5 Fire; ~~Fluctuation in voltage or deviation from normally supplied voltage that interferes with, or has the potential to interfere with, normal operation of equipment.~~

231.6 Failure of a primary motor, but only for such time as needed to repair or replace the primary motor. ~~Involuntary curtailment of power supply.~~

~~231.7 Any other reasonably unforeseen event that threatens public health and safety and that the APCO determines requires the immediate temporary operation of standby engines.~~

9-8-232 Reliability-related activities: ~~Any of the following~~ Either:

232.1 Operation of an emergency standby engine to test its ability to perform for an emergency use; and ~~Reliability tests of the emergency standby engine.~~

232.2 Operation of an emergency standby engine during maintenance of a primary motor. ~~critical motor.~~

~~232.3 Operation of an emergency standby engine after notification by the utility that involuntary curtailment is expected, but before involuntary curtailment begins.~~

9-8-233 Essential Public Service:

233.1 A sewage treatment facility which is publicly owned and operated consistent with an approved regional growth plan.

233.2 Water delivery operations;

233.3 Public transit;

233.4 Police or fire fighting facility;

233.5 Airport runway lights; or

233.6 Hospital or other medical emergency facility.

~~**9-8-233 Involuntary Curtailment**: Curtailment by the utility of power supply to the facility under the following conditions. The period of curtailment begins when the utility informs the operator that power reduction is imminent ("30-minute warning"), and ends when the normal power supply is restored:~~

~~233.1 The utility either reduces the supply of power to a facility, requires the facility to reduce its power demand, or requests the facility to reduce its power demand; and~~

~~233.2 The utility has been instructed by the Independent System Operator (ISO) to shed firm load; and~~

~~233.3 The utility sheds firm load.~~

~~**9-8-234 Failure of Regular Power Supply.** Any interruption of regular power supply due to circumstances beyond the reasonable control of the operator, except for involuntary curtailment.~~

~~**9-8-235 Remotely Located**: An emergency standby engine that is either permanent or portable, and meets the following criteria:~~

~~235.1 The engine is at a location where operators are not normally stationed; and~~

~~235.2 The engine is not equipped for automatic or remotely-controlled startup or shutdown.~~

9-8-300 STANDARDS

9-8-301 Emission Limits - Fossil Derived Fuel Gas: Effective January 1, 1997, a person shall not operate a stationary internal combustion engine fired exclusively on fossil derived fuel gas, unless the following emission limits are met:

301.1 Rich-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 56 ppmv as corrected to 15% oxygen, dry basis.

301.2 Lean-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis.

301.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.

9-8-302 **Emission Limits - Waste Derived Fuel Gas:** Effective January 1, 1997, a person shall not operate a stationary internal combustion engine fired on waste derived fuel gas or any combination of gaseous fuels and liquid fuels unless the following emission limits are met:

302.1 Lean-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis.

302.2 Rich-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 210 ppmv as corrected to 15% oxygen, dry basis.

302.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.

9-8-330 **Emergency Standby Engines, Hours of Operation**: A person may only operate ~~Operation of~~ an emergency standby engine under ~~shall be restricted to~~ the following circumstances:

330.1 for emergency use for an ~~U~~unlimited number of hours ~~of operation while mitigating emergency conditions; plus~~; and

330.2 for reliability-related activities so long as total hours of operation for this purpose do not exceed 100 hours in a calendar year, or limitations contained in a District permit, whichever is lower.~~The lesser of:~~

~~A total of 100 hours of operation per calendar year for reliability-related activities.~~

~~330.2.2 Any limitation on hours of operation contained in a permit to operate issued pursuant to Regulation 2-1-302.~~

~~**9-8-331 Remotely Located Emergency Standby Engines, Hours of Operation**: Operation of an emergency standby engine that is remotely located shall be restricted to the following:~~

~~331.1 Operation allowed to emergency standby engines under Section 9-8-330; plus~~

~~331.2 Unlimited hours of operation between the time that the operator is warned by the utility of an imminent curtailment of power, and a reasonable time after the curtailment ends, or is no longer imminent.~~

9-8-331 Essential Public Service, Hours of Operation: An essential public service may only operate an emergency standby engine under the following circumstances:

331.1 for emergency use for an unlimited number of hours; and

331.2 for reliability-related activities so long as total hours of operation for this purpose do not exceed 200 hours per calendar year, or hours of operation limits set forth in a District permit, whichever is less.

9-8-400 ADMINISTRATIVE REQUIREMENTS

9-8-401 **Compliance Schedule:** A person subject to the requirements of Section 9-8-301 or 302 shall submit an application for any Authority to Construct, necessary to achieve compliance with such requirements, by January 1, 1996, and be in compliance with all of the requirements of this rule by January 1, 1997.

9-8-500 MONITORING AND RECORDS

9-8-501 **Initial Demonstration of Compliance:** A person who must modify existing sources or install new control equipment shall conduct a District approved source test, pursuant to Sections 9-8-601 and 602 by March 31, 1997, for the purpose of demonstrating compliance with Section 9-8-301 or 302. Source test results shall be submitted to the District by May 31, 1997.

9-8-502 **Recordkeeping:** Any person who operates engines which are exempt from the requirements of Section 9-8-301 or 302 by Section 9-8-111 shall keep records of the number of hours the engines are fired on a monthly basis. Such records shall be retained for a minimum of 24 months from the date of entry and made available to District staff upon request.

9-8-530 **Emergency Standby Engines, Monitoring and Recordkeeping**: Each emergency standby engine shall be equipped with a non-resettable totalizing meter that measures hours of operation. All records shall be kept for at least two years, and shall be available for inspection by District staff upon request. The operator shall keep a monthly log of usage that shall indicate the following:

530.1 Hours of operation (total)

530.2 Hours of operation (emergency)

530.3 For each emergency, the nature of the emergency condition.

9-8-600 **MANUAL OF PROCEDURES**

9-8-601 **Determination of Nitrogen Oxides:** The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of nitrogen oxides are set forth in the District's Manual of Procedures, Volume IV, ST-13 A or B.

9-8-602 **Determination of Carbon Monoxide and Stack Gas Oxygen:** The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of carbon monoxide and stack gas oxygen are set forth in the District's Manual of Procedures, Volume IV, ST-6 (carbon monoxide) and ST-14 (oxygen).